

# TQm6000 GEN2 Series

## Wi-Fi 6 (802.11ax) Wireless Access Points

Allied Telesis Enterprise-class TQm6000 GEN2 Series access points feature Wi-Fi 6 technology, with up to 8 spatial streams delivering a raw capacity of up to 4.8 Gigabits.

### Overview

The Allied Telesis TQm6000 Series wireless APs support Wi-Fi 6 (802.11ax) and are ideal for small to medium enterprise networks, providing a high-value and easily deployed wireless solution.

The TQm6702 GEN2 has one 4x4 2.4GHz and one 8x8 or 4x4 5GHz Wi-Fi 6 (802.11ax) radio, delivering a raw capacity of 4.8 Gigabits.

The TQm6602 GEN2 has one 4x4 2.4GHz and one 4x4 5GHz Wi-Fi 6 (802.11ax) radio, delivering a raw capacity of 3.55 Gigabits.

The power and efficiency of Wi-Fi 6, and Allied Telesis smart technologies, enable a wireless Multi-Dimensional Exchange (MDX). This allows user devices to be managed and tracked as they move not only around the building floor, but between floors too. The innovative MDX wireless solution enables user device tracking in real-time as well as historically for security and auditing purposes - and also supports restoring the wireless network to a past operational configuration if required.

The TQm6000 GEN2 Series support Multi-User Multiple Input and Multiple Output (MU-MIMO), allowing multiple clients to send and receive data at the same time, substantially increasing throughput. A comprehensive feature-set provides a superior solution for Enterprise businesses.

Flexible deployment options include desktop use, and wall or ceiling mounting. Power can be supplied by Power over Ethernet, or by an optional AC power adapter.



## KEY FEATURES

### AWC-SCL (Smart Cluster)<sup>1,2</sup>

AWC Smart Cluster enables up to 10 APs to create one virtual AP running on a single-channel, so users can enjoy seamless roaming anywhere around the premises. Allied Telesis innovative hybrid mode enables simultaneous multi-channel and single channel operation from the APs for the best possible performance.

When using AWC Smart Cluster in single channel mode, a newly powered up TQm6602 GEN2 and TQm6702 GEN2 AP will automatically detect other TQm6602 GEN2 and TQm6702 GEN2 APs, and synchronize with them to create a smart cluster. Any changes to AP configuration are automatically synchronized to all members of the cluster.

### Flexible Management

The TQ6000 GEN2 Series can be managed in standalone mode using an intuitive web-based interface.

Autonomous Wave Control (AWC) provide centralized management, and regularly analyses the wireless network, automatically optimizing AP settings to reduce interference and minimize coverage gaps—all with no user intervention.

AWC wireless management is available on our Vista Manager EX network management platform, and from Vista Manager mini running on a number of switch and firewall products.

### Wi-Fi 6

IEEE 802.11ax Wi-Fi 6 wireless connectivity delivers performance and throughput that is four times faster than 802.11ac devices. In crowded wireless environments, efficient bandwidth distribution is important.

Wi-Fi 6 offers new features such as OFDMA and bidirectional MU-MIMO that increase the intelligence of the AP in managing multiple client connections at once, providing better throughput, connectivity and overall performance. With support for increased numbers of clients, and optimization for high-bandwidth and real-time applications like streaming video, the TQm6000 GEN2 Series is ideal for education, healthcare, manufacturing, and busy commercial environments.

### Captive Portal

Manage user access to the Wi-Fi network with captive portal. New users are taken to a login page to authenticate before gaining access to any online resources and applications.

Login options include direct online access, external authentication, or redirection to third party services—for example social media sites like Facebook or Twitter.

### QR codes simplify wireless connectivity

Generate a QR code on the AP that can be scanned by smartphones and other wireless devices to enable

quick and easy connection to the Wi-Fi network, eliminating the need to enter SSIDs and passwords.

### Passpoint® and OpenRoaming

Wi-Fi Alliance certified Passpoint enables auto-detection and connection of client devices, removing the need for users to find and authenticate on wireless networks. This provides a flexible Wi-Fi network with a high level of security.

OpenRoaming is an international Wi-Fi interoperability standard allowing devices using an applicable profile to automatically connect to OpenRoaming-compliant networks. This ensures ease of use, as well as avoiding security risks such as virus infection and data theft due to misconnection. The TQm6000 GEN2 can be used to deploy OpenRoaming-compliant Wi-Fi networks in public facilities and event venues.

### Virtual APs with Multiple SSIDs

The TQ6000 GEN2 Series support Virtual AP (VAP) functionality, with the assignment of different SSIDs and security policies for each VAP on the physical device.

<sup>1</sup> Note that AWC-SCL cannot be used when managing APs with the AWC plugin in Vista Manager.

<sup>2</sup> AWC-SCL clusters can only be created between APs of the same model. Clusters cannot be created with a mix of TQm6702 GEN2 and TQm6602 GEN2 APs.

VAPs can be mapped to VLANs for logical network separation and improved throughput. Enable communication by application, function or users.

### Fast Roaming

Fast roaming 802.11k, 802.11v, and 802.11r optimize discovering and selecting the best available AP in a Wi-Fi network. It establishes rapid connectivity for users to seamlessly move between APs, as the APs exchange security keys, so the client device does not need to re-authenticate on the RADIUS server as they roam.

### Wi-Fi Scheduler

Radio signal strength on the AP can be scheduled to suit the time of day, with different levels at different

times. For example, turning off radio signals late at night, when the Wi-Fi network may not be in use, can prevent unauthorized access and save power.

### Uplink Aggregation

The two wired LAN uplink ports can be aggregated for link resiliency and increased bandwidth using static link aggregation or the dynamic Link Aggregation Control Protocol (LACP), doubling uplink capacity to 5 Gbps.

### AMF-Security and Application Proxy<sup>3</sup>

The AMF-Security (AMF-Sec) solution enables internal LAN threat detection and automatic end-point isolation to protect the network. If a firewall detects suspicious traffic or a threat such as a virus

from a wireless device, it informs the AMF-Sec controller, which uses the AMF Application Proxy to communicate and enable to AP to block or quarantine the infected user device. This automatically protects the network from threats.

<sup>3</sup> An AMF-Security controller, and Vista Manager AWC wireless management are required

## SPECIFICATIONS

### Physical Specifications

	Width	Depth	Height	Radios	Weight	100M/1G/2.5G/5G (RJ-45) copper ports
<b>TQm6602 GEN2</b>	200 mm (7.88 in)	240 mm (9.45 in)	45 mm (1.78 in)	4 x 4 (2.4GHz) + 4 x 4 (5GHz)	1.2 kg (2.64 lb)	2 (PoE-in port)
<b>TQm6702 GEN2</b>	200 mm (7.88 in)	240 mm (9.45 in)	45 mm (1.78 in)	4 x 4 (2.4GHz) + 4 x 4 or 8 x 8 (5GHz)	1.2 kg (2.64 lb)	2 (PoE-in port)

### Power Characteristics

	Power Supply	Average Power Consumption	Maximum Power Consumption	Max Heat Dissipation
<b>TQm6602 GEN2</b>	100-240VAC	15W	19W	64.79 BTHu
	PoE	13W	16.9W	57.62 BTHu
<b>TQm6702 GEN2</b>	100-240VAC	19W	24W	81.84 BTHu
	PoE	17W	22.03W	75.12 BTHu

### Wireless

- Airtime fairness
- Automatic channel selection
- Automatic control of transmission power
- Band Steering
- Bi-directional Multi-user MIMO
- ECO-LED
- Fast roaming
- Multi-channel operation
- OFDMA
- RF load balancing
- Spatial Reuse
- VLAN (VAP (recommended 5 or less for 2.4GHz/5GHz respectively)/Dynamic VLAN)
- WDS
- Wi-Fi Multimedia (WMM) for traffic prioritization
- Wi-Fi Scheduler
- Wireless Distribution System (WDS)
- Zero Wait DFS

### Operational Modes

- Centrally managed by Vista Manager EX (up to 100 APs)
- Centrally managed by Vista Manager Network Appliance (VST-APL) (up to 100 APs)
- Centrally managed by Vista Manager mini (up to 100 APs)
- Standalone (supports up to 500 clients per radio)

### Management

- Automatic Channel Management
- Backup/restore settings
- DHCP client
- External RADIUS server for RADIUS Accounting
- Firmware upgrade
- Graphical User Interface (HTTP/HTTPS)
- Load-balancing
- NTP client
- Secondary RADIUS server
- Simple Network Management Protocol (SNMPv1, v2c, v3)
- Statistics Display
- Syslog notification

### Security

- Authentication and Accounting
  - IEEE 802.1X Authentication and Accounting
  - IEEE 802.1X RADIUS support
  - Shared Key Authentication
  - WPA (Enterprise, Personal)
  - WPA2 (Enterprise, Personal)
  - WPA3 (Enterprise, Personal)
- Captive Portal (External RADIUS, Click-Through, Redirection Page, Virtual IP Address, RADIUS Accounting, Walled Garden)

- Encryption
  - WEP: 64/128 bit (IEEE 802.11a/b/g only)
  - WPA/WPA2: CCMP (AES), TKIP
  - WPA3: CCMP/GCMP (AES/CNSA)
- MAC address filtering (Up to 3072 MAC address)
- SSID hiding/ignoring
- Client isolation
- Neighbor AP detection
- Kensington lock

### Compliance

- Certificate
  - Wi-Fi certified
  - RCM
  - IC
  - FCC
  - IMDA (For Singapore)<sup>4</sup>
  - WPC (For India)<sup>5</sup>
  - OFCA (For Hong Kong)
  - NBTC (For Thailand)
  - MIC (For Vietnam)
  - SIRIM (For Malaysia)
  - BSMI/MCC (For Taiwan)

<sup>4</sup> Certificated with firmware release 8.0.2-1.1 or later  
<sup>5</sup> TQm6602 GEN2 was certified with firmware release 8.0.2-1.1 or later

- Safety
    - EN 62368-1
    - UL 62368-1
    - UL 2043
  - ElectroMagnetic Compatibility
    - EN 301 489-1
    - EN 301 489-17
    - EN 55024
    - EN 55032, Class B
    - EN 55035
    - EN 60601-1-2
    - EN 61000-3-2, Class A
    - EN 61000-3-3
    - EN 61000-4-2
    - EN 61000-4-3
    - EN 61000-4-4
    - EN 61000-4-5
    - EN 61000-4-6
    - EN 61000-4-8
    - EN 61000-4-11
    - VCCI Class B
  - Radio equipment
    - AS/NZS 4268
    - EN 300 328
    - EN 301 893
    - FCC 47 CFR Part 15, Subpart C
    - FCC 47 CFR Part 15, Subpart E5
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- Environmental Specifications**
    - Operating temperature range: 0°C to 50°C (32°F to 122°F)
    - Storage temperature range: -25°C to 70°C (-13°F to 158°F)
    - Operating relative humidity range: 5% to 90% non-condensing
    - Storage relative humidity range: 5% to 95% non-condensing
    - Operating altitude range: Up to 3,048 meters maximum (10,000 ft)
  - Embedded Antennas**
    - Omni-directional
      - Frequency band: 2.4 GHz
      - Max. peak gain: 5.93 dBi
    - Omni-directional
      - Frequency band: 5 GHz
      - Max. peak gain: TQm6702 GEN2: 5.93 dBi  
TQm6602 GEN2: 5.92 dBi
  - Radio Characteristics**
    - Supported frequencies:
      - 2.412 ~ 2.472 GHz
      - 5.150 ~ 5.250 GHz
      - 5.250 ~ 5.350 GHz
    - 5.500 ~ 5.720 GHz
    - 5.745 ~ 5.825 GHz (Not supported in EMEA)
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- Modulation Technique
    - 802.11a/g/n/ac: OFDM
    - 802.11 ax: OFDMA
    - 802.11b: DSSS, CCK, DQPSK, DBPSK
    - 802.11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM
    - 802.11a/g/n: BPSK, QPSK, 16QAM, 64QAM, 256QAM
    - 802.11 ax: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM
  - Data Rate
    - IEEE802.11b 11/5.5/2./1Mbps
    - IEEE802.11a/g 54/48/36/24/18/12/9/6Mbps
    - IEEE802.11g/n 6.5-600Mbps (MCS0-31)
    - IEEE802.11g/n 6.5-800Mbps (MCS0-31)<sup>6</sup>
    - IEEE802.11a/ac 6.5-1733.3Mbps (MCS0-9)
    - IEEE802.11a/ax 6.5-2401.9Mbps (MCS0-11)
  - Media Access
    - CSMA/CA + Ack with RTS/CTS
  - Diversity
    - Spatial diversity
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- <sup>6</sup> Using 256 Quadrature Amplitude Modulation

## LICENSES

### Wireless Management Licenses

Wireless management of APs is available from the Vista Manager EX network management platform, and from Vista Manager mini running on the switch and firewall products listed in the following table.

platform	license Name	Description	max supported aps
Vista Manager EX	AT-FL-VISTA-BASE-1/5YR	Vista Manager EX network monitoring and management software license	NA
Vista Manager EX (Windows)	AT-FL-VISTA-AWC10-1/5YR <sup>7</sup>	Vista Manager AWC plug-in license for managing up to 10 access points	100
Vista Manager EX (Virtual (VRT))	AT-FL-VISTA-AWC10-1/5YR <sup>7</sup>	Vista Manager AWC plug-in license for managing up to 10 access points	100
Vista Manager EX (Network Appliance)	AT-FL-VISTA-AWC10-1/5YR <sup>7</sup>	Vista Manager AWC plug-in license for managing up to 10 access points	100
SwitchBlade x908 GEN2	AT-SW-AWC10-1/5YR <sup>8</sup>	Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points	100
x950 Series	AT-SW-AWC10-1/5YR <sup>8</sup>	Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points	100
x930 Series	AT-SW-AWC10-1/5YR <sup>8</sup>	Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points	100
x550 Series	AT-SW-AWC10-1/5YR <sup>8</sup>	Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points	45
x540L Series	AT-SW-AWC10-1/5YR <sup>8</sup>	Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points	45
x530 Series	AT-SW-AWC10-1/5YR <sup>8</sup>	Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points	45
ARX200S-GTX	AT-RT-AWC10-1/5YR <sup>9</sup>	Cumulative Autonomous Wave Control (AWC) license for up to 10 access points	50
AR4050S UTM Firewall	AT-RT-AWC5-1/5YR <sup>9</sup>	Cumulative Autonomous Wave Controller (AWC) license for up to 5 access points	25

<sup>7</sup> The AWC plug-in requires an AWC license, and a Vista Manager EX base license to operate on Vista Manager EX

<sup>8</sup> 5 APs can be managed for free. Purchase one license per 10 additional APs on switches, or one license per 5 additional APs on the AR4050S Firewall

<sup>9</sup> 20 APs can be managed for free on the ARX200S-GTX, and an additional 30 APs with a license

# STANDARDS & PROTOCOLS

## Ethernet Standards

IEEE 802.1AX-2008 Link Aggregation (static and dynamic)  
IEEE 802.3 10BASE-T  
IEEE 802.3u 100BASE-TX  
IEEE 802.3ab 1000BASE-T  
IEEE 802.3bz 2.5GBASE-T and 5GBASE-T ("multi-gigabit")  
IEEE 802.3x Flow Control  
IEEE 802.3at Power over Ethernet+  
IEEE 802.1Q VLAN Tagging

## Wireless

IEEE 802.11 a/b/g/n/ac/ax 4x4:4ss MU-MIMO  
IEEE 802.11k Radio Resource Measurement of Wireless LANs  
IEEE 802.11v Basic Service Set Transition Management Frames  
IEEE 802.11r Fast Basic Service Set Transition  
IEEE 802.11e WMM for Quality of Service  
IEEE 802.11i WPA/WPA2/WPA3 802.1x for Security

# ORDERING INFORMATION

<b>AT-TQm6702 GEN2-xx</b>	Enterprise-Class Wi-Fi 6 AP with 2 radios (4x4 2.4GHZ and 8x8 5GHz) and embedded antenna
<b>AT-TQm6602 GEN2-xx</b>	Enterprise-Class Wi-Fi 6 AP with 2 radios (4x4 2.4GHz and 4x4 5GHz) and embedded antenna

Where xx = 03 Regulatory Domain: Canada  
02 Regulatory Domain: Taiwan  
01 Regulatory Domain: United States Reserved  
00 Regulatory Domain: Other countries<sup>10</sup>

<sup>10</sup> Please check the Compliance section on page 2 to see which countries are certified to use these access point

# Related Products

<b>AT-PWRADP-01</b>	AC adapter
<b>AT-6101GP-yy</b>	Gigabit Ethernet PoE+ (802.3at) injector
<b>AT-7101GHTm-yy</b>	Multi-Gigabit Ethernet PoE++ (802.3bt) injector
<b>AT-BRKT-CONV-AP1</b>	Replacement <a href="#">bracket converter</a>

Where yy = 10 for US power cord  
30 for UK power cord  
40 for Australian power cord  
50 for European power cord